TECHNOLOGY DEPT.

First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Motor Accident Causes Outlined at Chicago; Bergquist Re-elected

Psychologists List Human Defects That in Many Cases Should Bar Applicants As Drivers

CHICAGO, Oct. 15.—Motor vehicle drivers were placed under the psychological microscope yesterday at a session of the National Safety Congress when Prof. A. H. Lauer of Iowa State College listed the defects that account for accidents, so far as the human element is involved.

He named the following: Manipulative ability below the average, poor vision, color blindness, muscular unbalance, emotional instability, poor education, low state of intelligence, prejudice against certain races or religions, unfamiliarity with the type of vehicle handled or with state and city ordinances, and distracting home conditions.

Prof. Lauer in his summary stated that "in general we have found active males of average health and size between the ages of 23 and 35 to be the best drivers. Drivers under 20 are inclined to take chances, while those over 35 may have inadequate training or be handicapped by ill health. No one has said the last word on the selection of drivers. Many things remain to be studied

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FORD REPORTED WORKING ON SIX IN ENGLISH PLANT

London, Oct. 15.—Coincidental with the opening of the Olympia automobile show reports have gained wide currency here that the Ford Motor Company will shortly issue from its plant at Dagenham a new six-cylinder model to sell in the neighborhood of $500.

No confirmation or denial of this story could be obtained from company officials here nor from the advertising agency. The understanding has been that Henry Ford was definitely determined not to build a six-cylinder model in this country, but conditions in the export field might put a different face on this matter. With no official confirmation or even denial, these English reports are probably on a par with the Ford rumors always current in this country.

MIDLAND OUTLINES EXPANSION PLANS; HONORS GILBERT

Cleveland, Oct. 15.—Plans for expansion of activities by the Midland Steel Products Company, Cleveland, were described by E. J. Kulas, president, at a dinner last night in honor of Harry T. Gilbert, newly-named vice-president and general manager of the company.

H. T. Gilbert

Appointment of Mr. Gilbert, who is widely known in the steel and automotive trades, is in line with the company's enlarged program, which has made necessary an addition to the executive management, President Kulas stated. No other changes in the executive personnel are planned.

"Midland has augmented its engineering talent and speeded up its research laboratory work, with the result that a number of promising

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GRAHAM-PAIGE GETS THREE FLEET ORDERS

Detroit, Oct. 15.—Graham-Paige Motors Corporation has received three fleet orders for Graham cars, it was announced yesterday.

One order, from the New York City Fire Department, calls for 20 sedans, the Oregon State Police Department has asked for 25 coupes, and the United States Department of Commerce has ordered 25 sedans.

Late News Flashes

New York, Oct. 15.—Bradstreet's announces that business failures during the week ended October 8 numbered 514, as against 525 in the preceding week and 384 in the same week of 1930.

* * *

Oklahoma City, Oct. 15.—Production of petroleum, which is under military control, is running well below that allowable at this time. Operators are circulating a petition asking a hearing on October 26 for revision of proration schedules to stabilize production.

* * *

London, Oct. 15.—The automobile industry of Great Britain has benefitted at least temporarily by the country's retirement from the gold standard. The depreciation of the pound has given British dealers at least a 20 per cent. advantage over those selling American cars, this being in addition to the 33 1-3 per cent. duty on imported automobiles.

Commercial Car Sales in 16 States In September 30% Below 1930

DETROIT, Oct. 15.—Reports have now been received by R. L. Polk & Co. covering September, 1931, sales of commercial motor vehicles in sixteen states and the District of Columbia. Total sales in these states amounted to 6,288 units, which compares with 9,109 in September, 1930, and with 7,099 in August of 1931.

In spite of the general tendency downward under the level attained in September, 1930, six makes of commercial vehicle units showed increase for September, 1931. Diamond-T registered 90 units, as compared with 80 last year. G. M. C. sold 164 units, against 110 in the same month a year ago. Pierce-Arrow sold 2 units, with none put out in September, 1930.

Reo totaled 126 commercials, as compared with 91 in September last year. Studebaker placed 73 units in owners' hands, as against 22 last year, and Willys-Overland made a record of 63, against 48 in 1930. It it also interesting to note that White registered 63, against 68, very close to the level attained last year.

The following is the list of states and totals so far reported:

	September 1931	September 1930
Arkansas	143	252
Delaware	76	85
Florida	358	466
Idaho	187	325
Illinois	1,120	1,534
Maryland	378	456
Minnesota	486	845
Montana	143	240
Ohio	1,119	1,538
North Dakota	129	424
South Carolina	242	325
South Dakota	116	275
Utah	179	294
Virginia	566	706
West Virginia	255	350
Wisconsin	577	799
District of Columbia	214	195
Totals	6,288	9,109

Chevrolet Ad Chief

Appointment of Robert H. Crooker (above) as advertising manager of the Chevrolet Motor Company, succeeding R. K. White, who has been transferred to the Oakland division of the General Motors in a sales capacity, was announced today in Detroit by H. J. Klingler, vice-president and general sales manager of Chevrolet.

Crooker's successor as assistant is W. C. Byers, formerly sales promotion manager of Chevrolet's region at Cincinnati. Both posts were filled according to Chevrolet's established policy of promoting men within the organization.

WAHLBERG ELECTED VICE-PRESIDENT OF NASH MOTORS CO.

Kenosha, Wis., Oct. 15.—N. E. Wahlberg, chief engineer of the Nash Motors Company, Kenosha, and an international authority on fine motor car design and development, now takes his post as vice-president in charge of engineering of the Nash manufacturing organization.

N. E. Wahlberg

His election to the vice-presidency by the directors of the company is considered by the engineering fraternity as a striking recognition of his many important contributions to the advancement of automobile efficiency and excellence over a long period of active service, and a mark of his outstanding success in the supervision of Nash engineering.

When C. W. Nash founded his company in August of 1916, he selected Mr. Wahlberg among the leading automobile engineers of the country to be associated with him in the building and development of the Nash car. Since then, Mr.

(Continued on Page 2)

NORMAL USED CAR STOCKS ABROAD, REPORT INDICATES

Washington, Oct. 15.—A generally healthy condition of American used car stocks in foreign countries is indicated by a report just issued by the automotive division of the Department of Commerce. Low or normal stocks of American cars were reported in a heavy majority of the thirty-six countries included in the survey.

Stocks of American cars in the medium price group were so low in

(Continued on Page 2)

E. G. BUDD TO ENTERTAIN M. CITROEN ON MONDAY

New York, Oct. 15.—Andre Citroen, president of the Citroen Motor Works of France, will be guest on Monday of E. G. Budd, president of the E. G. Budd Manufacturing Company, in Philadelphia. During his stay M. Citroen will make a through inspection of the Budd body plant in that city, and will be honor guest at a luncheon sponsored by the Chamber of Commerce at the Bellevue-Stratford.

M. Citroen's cars in France are all fitted with all-steel bodies, and many of the processes used in the fabrication of Budd all-steel bodies are used in the Citroen plants. His visit to the Budd body plant will be in the nature of a study of the latest welding methods developed by the Budd company.

U. S. Cars in Second Place At Annual Paris Salon

Paris, Oct. 15.—At the 25th International Automobile Salon at the Grand Palais, leading makes of motor cars were well represented, including British, Italian, Austrian, Spanish, German, Czechoslovakian, Belgian, French and American exhibits.

In number of models, French exhibits led. The United States was second, with cars more advantageously placed than in previous years. Leading American automobile men were assembled here, and presented an optimistic front, notwithstanding that the American car has lost 50 per cent. of its French market since the last International Salon. This slump is attributed to the protective automobile tariffs enacted by France in April, 1930, when the basis of import taxation was changed from ad valorem to evaluation of duties by weight.

This tariff measure has stimulated French automobile production and given France second place, after the United States, in world auto output.

Though American sales are off in France, Henry Ford's French-built machines are making inroads in the French market. The Ford car is not new to France. Its popularity was built four years ago, before a change in model necessitated the temporary withdrawal of these cars from the French market. The issue of Ford of France stock in April, 1929—40,000,000 common stock at 100 francs par value—and the conversion of the Asnieres plant from an assembling to a manufacturing unit, focused the attention of French manufacturers on a formidable rival. As in America, a nationwide chain of dealers and service stations has advertised and popularized the car.

German General Motors a Contender

Another important contender is General Motors' Opel of Germany, which formally launched its French sales campaign with the twenty-fifth

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WHITE REPORTS FLEET ORDERS FOR 396 UNITS

Cleveland, O., Oct. 15.—The White Motor Company has received orders in fleets of five or more for motor coaches and buses totaling 396 cars since July 1.

Among the large truck orders were: Adolf Gobel, New York city, 65; Virginia Electric and Power Company, Norfolk, 25; Lurie Auto Company, Inc., New York city, 22; Gimbel Bros., New York city, 22; Metropolitan Distributors, Inc., New York city, 17.

Motor Accident Causes Outlined at Chicago

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and companies inaugurating such work will find new criteria of driving in their own fields. Any training program must be more or less individual to be effective. Any general program of routing training will lose its value if not varied constantly."

Discussing the problem of safety brought up to date Albert W. Whitney of the National Bureau of Casualty and Surety Underwriters declared a study of statistics shows that the increase in fatal accidents among adults since 1927 has been twenty-eight per cent. whereas the decrease among school children has been nineteen per cent. and among those of pre-school age ten per cent. He urged educational campaigns among adults because of their success among children.

In advance of the annual banquet at the Stevens Hotel it was announced that C. W. Bergquist of the Western Electric Company was re-elected president of the National Safety Council. Bergquist presided at the banquet.

Thirty different sections are holding 150 meetings.

MIDLAND OUTLINES EXPANSION PLANS; HONORS GILBERT

(Continued from Page 1)

new products in diversified lines have been developed," said Mr. Kulas. "For one of these products, a new axle housing, large orders have been received and $100,000 of new equipment is being installed for manufacture."

In addition to its automotive products, which include frames and a complete line of four-wheel brakes for all types of passenger cars, trucks and buses, the company is planning to enter other fields, it was stated. The company's plants are located at Cleveland and Detroit.

Vice-president Gilbert has been a steel company executive for many years, being associated with the Sharon Steel Hoop Company as vice-president until 1928. In that year he became vice-president in charge of sales of the Republic Iron and Steel Company and later, when the Republic Steel Corporation was formed, he continued in the same capacity in the larger organization. In September, 1930, Mr. Gilbert was made assistant to the president of the Republic Steel Corporation.

AUTOMOTIVE STEEL BUYING EXPECTED TO BOOST SCHEDULES

New York, Oct. 15.—For the rest of the year purchasing of steel by the automobile industry will play a conspicious role in the steel trade news, it is expected. Automobile production is expected to get under way in a serious manner at the start of next month. Already manufacturers of automobile castings and various parts are speeding production.

Steel purchasing for automobile making will be conducted in a very conservative style, the automotive builders specifying thirty days instead of by the season as in some recent years. It is very difficult to estimate or gauge the probable consumption of steel over the next few months in this line. The automobile makers are striving as never before to make practical and artistic creations on wheels which will coax the public into the buying ranks at a time of depression.

The latest prospective steel business from the railroads takes the form of an inquiry for 35,000 tons of rails for the Erie and an inquiry for 20,000 tons of rails for the Louisville & Nashville.

Iron and steel jobbers at New York experience the same small scale buying which prevailed last month. Orders are none too numerous and they involve extremely low tonnages, so small, many times, that the cost of truck delivery wipes out profits.

NAVY ORDERS 21 TRUCKS FROM AUTOCAR COMPANY

Ardmore, Pa., Oct. 15.—The Autocar Company, motor truck manufacturers, have just been awarded an order for twenty-one heavy duty chassis by the United States Navy Department in Washington.

The delivery instructions indicate that these Autocar trucks will be put to work at nearly all of the prominent naval stations in the country, including the Brooklyn Navy Yard; the Naval Power factory at Indian Head, Md.; the Naval Home and the League Island Navy Yard, both in Philadelphia; the Naval Proving Grounds at Dahlgren, Va.; the Naval Air Station at Pensacola, Fla.; the Naval Training Station, the Naval Operating Base and the Naval Supply Depot, all at San Diego, Cal.; the Puget Sound Navy Yard in the state of Washington; the Mare Island Navy Yard in California; and the Navy Yard at Charlestown, Mass.

U. S. CARS HOLD SECOND PLACE IN PARIS SALON

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international salon. Opel has concluded arrangements with General Motors Export Company for entering this market, and no exhibit at the salon attracted greater interest than the new Opel model, direct from the General Motors works at Russelsheim. This was the first international showing of the new ½ and ⅛-liter cars now being made in the German plant. In Europe, the man in the street places much emphasis on upkeep; the smaller powered model gives Opel a better competitive position.

International models this season were neither radically new nor startling. Accessories were elaborate, but generally speaking, it was trade, not trimmings, which engrossed the attention of the assembled leaders of the world's automotive industries. The new English Austins attracted attention, less for beauty of line and mechanical excellence than for the fact that Austin declared 100 per cent. dividend.

Austin Motor Company reported a record year for 1930, with an increase of 26 per cent. in sales in the home market. On October 31, warrants will be posted for a 100 per cent. dividend payable to ordinary share holders. For the preceding seven months, when net profits reached £384,342, holders of 5s. ordinary shares, received a distribution of 60 per cent.

WAHLBERG ELECTED VICE-PRESIDENT OF NASH MOTORS CO.

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Wahlberg has been the guiding factor in the company's march to the forefront of mechanical development and automobile quality in the American field.

"It is needless to say that the action of the board of directors, in electing Mr. Wahlberg to the vice-presidency, is highly pleasing to me and to all his associates," President Nash declared today. "His tireless and loyal work over many years has been of inestimable value not only to our division, but also to automobile engineering as a whole. His record is one of constant achievement in the field of automobile improvement and one which well merits this mark of recognition."

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRINGS RESULTS

NORMAL USED CAR STOCKS ABROAD, REPORT INDICATES

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ten countries as not to be judged sufficient to meet the immediate demand. Stocks of medium priced cars were normal in eighteen countries and high in only eight countries.

Stocks of low priced American cars were reported as low in seven countries, normal in twenty-two countries and high in seven countries.

High priced American car stocks were low in nine countries, normal in eighteen countries and high in only three countries.

Used American car stocks did not show quite as desirable condition as the new cars, being high in twelve countries, normal in eight and low in seven.

Stock of American low-priced cars and light capacity trucks were both reported very low in France, the one country which has been untouched by financial depression. Belgium, another country which retains a healthy financial status, reports low stocks of medium and high priced American cars, also low stocks of American used cars and heavy duty trucks.

Australia stands out as one important market where all types of new American cars seem to be overstocked. Only in the used car group are stocks normal.

DECREASE OF 14% IN CONSUMPTION OF CRUDE RUBBER

New York, Oct. 15.—Consumption of crude rubber by manufacturers in the United States for the month of September decreased 14 per cent. as compared with August. The usual seasonal decline is 11 per cent. September consumption is estimated to be 23,638 long tons as compared with 27,586 long tons for August and 25,515 long tons for September 1930, according to statistics released by the Rubber Manufacturers Association today.

Imports of crude rubber for August amounted to 40,505 long tons, an increase of 5.6 per cent. over the August figure of 38,370 long tons, and 2.6 per cent above September 1930.

The association estimates total domestic stocks of crude rubber on hand September 30, at 254,324 long tons, an increase of 5.6 per cent. over August and 49.7 per cent. over September 30, 1930.

Crude rubber afloat for the United States ports on September 30 is estimated at 62,420 long tons as against 61,469 long tons on August 31 and 60,924 long tons on September 30, 1930.

HOFFMAN ORDERS NEW WRITTEN TEST FOR ALL LICENSE APPLICANTS

Trenton, N. J., Oct. 15.—Starting November 1 all applicants, for driver's license in the State of New Jersey will be given a set of one hundred questions covering salient points of the Motor Vehicle and Traffic Acts and the examinations will be based upon these questions.

"I am convinced," said Commissioner Harold G. Hoffman, "that the new plan has many advantages over the present system. We are anxious to have all drivers know the most important features of the law. I am opposed to 'trick' questions designed to trap the applicant for driver's license.

"At the present time our appropriations are so inadequate that we are unable to furnish every applicant for driver's licenses with copies of the moter vehicle and traffic laws, and yet we have expected the applicants to be thoroughly familiar with their provisions and have based their written examinations upon them.

"The laws generally are written in a way that is rather difficult for the average applicant to understand. Where they do obtain the law books they are inclined to study many non-essentials and to overlook important points of the motor acts."

SPARKS from DETROIT

Bob Crooker, Advertising Man

* * *

Help Wanted!

* * *

Andre Citroen

* * *

Chris Sinsabaugh—Detroit Editor

BACK of the appointment of Bob Crooker as advertising manager of Chevrolet is the story of a youngster who, at the start of his business career, definitely knew what he wanted to be, and he became just that—an advertising man, whose recent promotion places him in charge of the largest advertising appropriation in the automobile business. This does not embarrass him any, for he is used to such honors. As advertising manager of the old Chalmers Motor Car Company, he administered the first million-dollar campaign in the industry.

* * *

WHILE still a schoolboy, Crooker worked during his vacations as office boy for the Detroit News, in which job he attracted the attention of the general manager, H. S. Scott.

"Bob, what do you want to be?" asked Mr. Scott. And Bob replied that his ambition was to become an advertising-man.

Just at this time, 1915, the Detroit Institute of Technology started an advertising course under the direction of E. St. Elmo Lewis and Frank Campbell, and young Crooker enrolled, with Mr. Scott paying the tuition fee. He was the course's first graduate. From that point on it has been climb, climb, climb up the advertising and sales promotion ladder—Burroughs Adding Machine Company, Chalmers Motor Car Company, Federal Motor Truck Company, the Campbell-Ewald advertising agency and then Chevrolet as assistant advertising manager, each a rung that has carried him upward.

* * *

ALL of this is background for the exploitation of Bob Crooker's ideas as to the education necessary to become a successful advertising manager. His experience has taught him that the man who places the space should be just as familiar with sales promotion as he is with the selection of media. Understanding the problems of the sales department, the modern advertising manager is in a position to intelligently handle his own proposition so that his employer will get the full 100 cents out of his advertising dollar.

Crooker always has been as closely identified with sales promotion as with the exploitation of his firm's product through the use of printer's ink. He knows how automobiles are sold and his wide acquaintance among dealers is far from being a minor asset.

* * *

IN this neck of the automobile woods typewriters are clicking and secretaries are busy copying an epistle which is making the rounds—a sort of chain-letter proposition. Who originated it is unknown, but each recipient chuckles over it, then proceeds to recopy it and send it to such of his friends whom he wishes to twit about their drinking habits. This letter is having wide distribution in Detroit automotive circles and reads as follows:

Dear Brother—You no doubt have already heard of the whirlwind campaign I make each summer in the chaste and holy cause of temperance. My most popular and famous speeches, much praised by the W. C. T. U., have been "Booze and Belial," "Volstead and Virtue," "Rum or Religion," and "There Is No Corkscrew in Christianity."

Thousands of former misguided mortals are now converted to temperance, due to my efforts alone. I need your help. Will you give it to me?

In conjunction with my new lecture, I have on the stage with me what I call my "object lesson." He sits on a chair beside me and I pathetically point him out to the audience as an example of the ravages of drink. For years Clarence Plutz has been my most loyal support in the great cause, but last winter, as a natural result of his vicious habits, Clarence passed on, and I will need another man to accompany me on my coming fall tour.

Bellevue Hospital and the A. I. C. F. have referred me to you as being fitted to take poor Clarence's place. Help me! Yours in the Cause, Rev. Samuel Zilsch.

* * *

TAKE it from one who knows, this Andre Citroen, the French Henry Ford, who will be in our midst next week, has many American characteristics, not the least of which is plenty of pep. I recall when he visited America in 1923, his

(Continued on Page 4)

WOMAN SALESMAN SHOWS 'EM HOW TO SELL IN HARD TIMES

Miss Eva Jewell, who placed third among all salesmen in the country in the Oldsmobile Summer Sales Contest, sold in two months nearly $30,000 in new and used cars.

Miss Jewell has been selling automobiles in and around Antigo, Wis., for the past ten years. Today she has a profitable business, varied pieces of property and a healthy bank balance. Antigo is located in the north central part of Wisconsin, and has a population of less than 9,000.

At one side of the town is the United Indian Reservation, and on the other is a settlement of Kentuckians, who live principally by fishing and acting as guides. Most of the surrounding country is forest land.

In this far from fertile field Miss Jewell sold 231 new and used cars in the last nine months of 1930. This was considered exceptional, but her sales during the two months' contest were even more remarkable. These sales, in addition to her regular profit, netted her $500 in cash and several hundreds of dollars' worth of merchandise in awards for leading the field on several occasions.

Miss Jewell's method for success, according to her own admission, is simple. It consists in working from 8 a. m. until midnight most days. She thinks nothing of driving fifty miles to interview a prospect and in this manner manages to secure business where many others say there isn't any to be had.

Mileage Contest That Brought in Business

A contest which aroused much interest was staged recently by the Van Drisse Motors, Green Bay, Wis., Ford dealer. A gas mileage contest for Model A Fords was sponsored by the firm, with three cash prizes, $10, $5 and $2.50. Prizes were awarded to the Ford owners making the greatest number of miles per gallon.

To compete in the contest it was necessary that cars of all entrants have gasoline and sediment bulb cleaned out, carburetor adjusted, distributor points checked and adjusted, timing reset and checked if needed, spark plugs cleaned and adjusted, brakes tested for drag, tires properly inflated and water placed in the battery. A charge of $1 was assessed for these eight operations.

WISCONSIN AXLES

Quiet, staunch in the steady performance of their job; to haul, to stay out of the repair shop, to perform at lowest possible cost.

WISCONSIN AXLE CO.

Oshkosh Wisconsin

Getting Message Across

ANNOUNCING Formal Opening Tomorrow
Carteret Brake Service Station
Serving Motorists More Than 15 Years
The Newest, Mos. Modern Up-to-date Brake Shop In Now Open —I Is Equipped with All the Newest Type Machinery.
We Give Your Brakes An Actual Road Test On The New WEAVER Brake Testing Machine
This determines accurately your stopping distance at various speeds, the brake pressure on each wheel and discloses any weakness there may be in your Braking System. Factory trained mechanics servicing Hydraulic, Bendix and all other types of Brakes for passenger cars and trucks. Specialists in Steel-Draulic Braking Systems —used on Pontiacs, Oaklands, Hupmobiles and Auburns.
Scientific Wheel Aligning Headlight Testing Brake Testing Most Modern Equipment
We Use Genuine RAYBESTOS Brake Lining
BATTERY SERVICE
Storage—Day, Week, Month
Opening Specials
Specializing in CADILLAC LA SALLE MOTOR REPAIRS
Body and Fender Work Removed
Lubrication—Greasing
Electrical Experts
Cars To Hire
CARTERET SERVICE
2563-65 BOULEVARD
At Duncan Avenue, Jersey City
Phone Bergen 3 1776 1777 1627

HERE IS how Carteret Service of Jersey City, N. J., announced the opening of its new official brake and service department. All new modern machinery and equipment was installed. During the month special offers are being made on the many branches of the service department. Carteret Service Building for a great many years was the home of the Blakeslee Cadillac Company. During recent years alterations have been made and an adjoining building erected

LUNDGREN APPOINTED

St. Paul, Minn., Oct. 15.—John Lundgren, formerly with the Egan Chevrolet Company of South St. Paul, has been appointed used car sales manager at the Kemper Chevrolet Company, 801 East 7th St., it has been announced by Wayne Kemper. Mr. Lundgren has been associated in the sale of automobiles in St. Paul for the past ten years.

OSTRANDER APPOINTED

St. Paul, Minn., Oct. 15.—C. B. Ostrander is the new manager of the Twin Cities branch of the Ford Motor Company. He comes from the Memphis, Tenn., branch, and succeeds A. W. Bendick, D. W. Vanderhoef remains here as assistant manager. At one time Mr. Ostrander was assistant manager of the San Francisco branch.

Zorniger Honored By Commission in Tenn. National Guard

F. E. Zorniger, zone manager for Chevrolet at Knoxville, Tenn., found that due to the topography of the locality his business trips to far points in the zone consumed an excessive amount of time, and, therefore, quite frequently has hopped from Knoxville to Nashville and other points. He has become extremely "air-minded" and has adopted the slogan, "For short hops Chevrolet—for long hops take a plane."

His interest was noted by the 150th Air Squadron of the Tennessee National Guards, and, as their guest, was present in Memphis at the national convention of Exchange Clubs, where he dined and talked with Major Doolittle, Lieut. MacReddie and other luminaries of the aviation world. Mr. Zorniger has been highly honored this week, having received his commission as colonel (honorary) of the 150th Air Squadron, Tennessee National Guards.

Every Year Since 1909
BROCKWAY-INDIANA TRUCKS

have been meeting every transportation problem.

For 1931 these fast, sturdy new models offer greatest value to the truck buyer looking for service and results.

Whether you buy or sell trucks, get all the facts! Visit our nearest branch or distributor, or write

BROCKWAY MOTOR TRUCK CORP.,
General Offices
Cortland - - - - New York

Cumulative New Commercial Car Registration Statistics, September, 1931

Returns for today: Arkansas, Idaho, Maryland, Ohio, Utah, Virginia and West Virginia.

In this table 16 states and the District of Columbia.

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies.

Commercial Car Registrations do not include buses.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	International	La France Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Arkansas			67		2		56	1	17													143	Arkansas
Delaware			28		1		34	1	9				2								1	76	Delaware
Florida			140		4	1	195	1	13				2					1	1			358	Florida
Idaho			69		6		76	6	17		1		3			1		1	4		3	187	Idaho
Illinois	2	2	355	40	53	5	426	55	84		6		14	2	1	12		4	11	1	47	1120	Illinois
Maryland	1	3	144	4	5	1	132	11	33	3	1	1	16		1	3		8	2		9	378	Md.
Minnesota			170	13	14	2	190	7	58		1	1	10	1		4		1	8		6	486	Minn.
Montana			37		7		68		23				2			5					1	143	Montana
North Dakota			43		5		45		31				1						1		3	129	N. Dak.
Ohio	3	3	323	3	43	4	447	36	82	3	3		43	3	7	29		34	15		38	1119	Ohio
S. Carolina			122		8	1	104	2	2												3	242	S. Car.
South Dakota			48	4	5	1	27	1	24							4			1		1	116	S. Dak.
Utah			57		5		86	4	10				13			1			1		2	179	Utah
Virginia	2		267		13	1	226	7	34	2	4		2					5	2		1	566	Virginia
West Virginia		1	84	1	12	1	112	3	17	1			6			8		1	7		1	255	West Va.
Wisconsin			224	15	22	1	219	11	37				12	3	1	6		3	10		13	577	Wis.
Dist. of Col.	4		44	10	4	2	117	18	4									4			7	214	D. of Col.
Totals	12	9	2222	90	209	20	2560	164	495	9	16	2	126	9	10	73		62	63	1	136	6288	**Totals**
Ark., 1930			103		7		122		16				1					1			2	252	Ark., '30
Delaware, '30	4		25		1		48	1	4						1						1	85	Del., '30
Florida, 1930			140		4	7	295		8		3		2				1		3		3	466	Fla., '30
Idaho, 1930			103		6		188	1	18				4			1			1	1	2	325	Idaho, '30
Illinois, 1930	13	3	497	39	43	5	714	15	93	1	10		12	7	1		5	20	5	2	49	1534	Ill., 1930
Md., 1930	5	4	113	8	14	4	223	17	19	6	10		13	1	4	3	1	11			2	458	Md., 1930
Minnesota, '30		2	250	5	26	2	473	6	50				4			4	4	2	7	2	8	845	Minn., '30
Montana, '30			69		7		108	1	43		1		1			1		1	1		7	240	Mont., '30
Nor. Dak., '30			148	1	8		153	3	95				3			3		1	4		5	424	N. D., '30
Ohio, 1930	8	10	422	5	54	11	775	21	80		18		23	1	4	6	12	22	13	4	47	1536	Ohio, '30
So. Car., 1930			128		3	1	179		3		4		3								4	325	S. C., '30
S. Dakota, '30		1	80	2	6	1	119	1	54				4			1			1		5	275	S. D., '30
Utah, 1930			91		5		149	13	13		2		5			2		3	1		10	294	Utah, '30
Virginia, '30	3	4	251		22	2	356	8	34	4	1		2	1	3		1		1		13	706	Va., 1930
West Va., '30			113		16	1	163	10	26				6				1	2	3		9	350	W. V., '30
Wisconsin, '30			266	14	15	3	402	9	50		1		8	4	2	1	2	1	8		13	799	Wis., '30
D. of Col., '30	4	1	34	6	6	2	114	4	7	2	8						1	4			2	195	D. C., '30
Totals	37	25	2833	80	243	39	4581	110	613	13	58		91	14	15	22	28	68	48	9	182	9109	**Totals**

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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Fuel for 500 Years

IN a book just published, entitled "Petroleum," we find the rather startling statement that the United States has a supply of the crude product from which motor fuel can be produced sufficient to last for 500 years. The authors of the book are Ralph Arnold and William J. Kemnitzer, geologists, who estimate that we have used to date about 2 per cent. of the available supply of crude materials for the production of motor fuel.

When we remember that fifteen years ago we talked about the exhaustion of the crude oil supply and consequently of gasoline by 1925 or 1926, this present estimate of 500 years ahead of us before the spark plugs cease from sparking and the carburetor is at rest, has an element of comedy in it.

Messrs. Arnold and Kemnitzer, of course, do not limit themselves to the supply of petroleum when they make this prophecy. They consider the shale deposits and the coal supply as part of the crude materials from which motor fuel may be extracted. That these are the sole recourse for fuel bases, outside of petroleum, we well may doubt. In 500 years chemists will be performing what would seem to us now as sheer miracles. The extraction of alcohol from almost any vegetable product is a possibility today and the operation of internal combustion engines on alcohol fuel is possible, even today. Looking at the fuel prospects of the future, the 500-year estimate of Arnold and Kemnitzer is a modest statement of already established fact.

However, we shall take this opportunity of advising readers of Automotive Daily News not to place contract for motor fuel over a period of 500 years, because by that time automotive vehicles of whatever type may prevail will probably be running on bottled sunlight or static electricity or good intentions, compressed and fired by enthusiasm or what you will.

At any rate there is no reason to fear any failure of the supply of motor fuel, for 500 years at least, and even in our present robust health the problem beyond that time becomes somewhat academic.

BACK in 1913 Dr. Wesley C. Mitchell wrote a book on "Business Cycles." In spite of the fact that we have since had further opportunities of studying this phase of business development and are "enjoying" a wonderful chance at the present moment, Dr. Mitchell eighteen years ago gave us one of the clearest analyses of this economic phenomenon that we ever have had.

Dr. Mitchell traces the depression period back to its origin in the boom. In the later phases of a prosperous period, everybody is feeling flush and optimistic. The manufacturer expands his business, the wholesaler contracts for heavy consignments, the retailer stocks up with a varied and imposing array of goods to meet expected demand. And even the ultimate goat in all things, the consumer, lets his enthusiasm run away with his judgment. He buys and buys and buys, and what his wife and daughters do is "nobody's business," if we may be pardoned the slang.

Then comes the morning after. Manufacturer, wholesaler, retailer and consumer and said consumer's wife and daughters wake up with a headache. It throbs and throbs the harder as each contemplates his expansive acquisitions of the flush period. The manufacturer looks at his expanded plants, the wholesaler considers his contracts for deliveries, the retailer looks at his crowded shelves and the consumer looks at his pocketbook and groans.

But in the fullness of time there comes a period when the manufacturer has got behind in his supplies of raw materials, the wholesaler has worked out from under his contracts, the retailer contemplates empty shelves and the consumer looks at a hole in the seat of his only trousers. And then begins a new cycle, which eventually reaches the levels of prosperity.

Aren't we today pretty close to the empty shelves and the hole in the seat of our only trousers?

CENTURY AIR LINES CARRY 7,512 PASSENGERS IN SEPT.

Chicago, Oct. 15.—Century Air Lines, Inc., a division of the Cord Corporation, carried a total of 7,512 passengers on its Middle West division during the month of September, L. B. Manning, vice-president and general manager of the Cord Corporation, announced today. This figure brings the company's aggregate total to 40,213 passengers since March 23, 1931, Mr. Manning said.

COMING EVENTS

OCTOBER

12-16—**Chicago, Ill.** National Safety Council
14-16—**Pittsburgh, Pa.** Society of Industrial Engineers convention.
14-15—**Albany, N. Y.** New York Automobile Dealers Association, convention
15-17—**Pittsburgh, Pa.** American Gear Manufacturers Association, convention
15-24—**London, England.** International Motor Exhibition, Olympia Hall.
19-22—**Chicago, Ill.** National Hardware Association, convention.
21—**Toronto, Ont.** Canadian Section, S. A. E. meeting, Royal York Hotel.
22—**New York city.** Metropolitan Section Society of Automotive Engineers, meeting A. W. A. clubhouse.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.
23—**New York City.** American Iron and Steel Institute, convention.
27-29—**Washington, D. C.** Transportation meeting, Society of Automotive Engineers, Hotel Shoreham.
27-28—**Chicago, Ill.** American Railway Association, Motor Transport Division meeting.
27-29—**Baltimore, Md.** Society of Automotive Engineers, Baltimore Section, meeting.
27-29—**Washington, D. C.** Meeting of Washington Section, S. A. E., in conjunction with National Transportation meeting.

NOVEMBER

5-14—**London, England.** International Commercial Motor Transport Exhibition, Olympia Hall.
10-12—**Chicago, Ill.** American Petroleum Institute, annual meeting, Hotel Stevens.
28-Dec. 9—**Brussels, Belgium.** Automobile Salon.
29-Dec. 5—**New York, N. Y.** Automobile Salon, Hotel Commodore.
30-Dec. 4—**New York City.** American Society of Mechanical Engineers, annual meeting.

DECEMBER

7-12—**Atlantic City, N. J.** Motor and Equipment Association and National Standard Parts Association, Joint Trade Show.
9-11—**Atlantic City, N. J.** American Institute of Chemical Engineers, meeting.

JANUARY

9-16—**New York City, National Automobile Chamber of Commerce, National Automobile Show.**
9-17—**Los Angeles.** Annual Automobile Show of the Los Angeles Motor Car Dealers Association.
10-13—**Chicago.** National Wheel and Rim Association, annual convention, Edgewater Beach Hotel.
11-14—**Detroit, Mich.** American Road Builders Association, twenty-ninth convention and show.
14—**New York city.** Society of Automotive Engineers, annual dinner, Pennsylvania Hotel.
16-23—**Newark, N. J.** Newark Automobile Dealers' Association's annual show
16-23—**Buffalo, N. Y.** Annual automobile show of Buffalo Automotive Trade Association, Inc., 174th Regiment Armory.
17-23—**Cincinnati.** Automobile show of Cincinnati Automobile Dealers' Association.
17-23—**Milwaukee.** Annual Automobile Show, Milwaukee Automotive Trades, Inc.
22-30—**New York.** National Motor Boat Show, Grand Central Palace.
23-30—**Minneapolis.** Annual Automobile Show of Minneapolis Automobile Trade Association
23-30—**Pittsburgh.** Annual automobile show of Pittsburgh Automobile Dealers' Association, Motor Square Garden.
25-29—**Detroit, Mich.** Society of Automotive Engineers, annual meeting, Bork Cadillac Hotel.
30-Feb. 6—**Cleveland.** Annual Automobile Show of the Cleveland Automobile Manufacturers and Dealers Association, Public Auditorium.
30-Feb. 6—**Chicago, Ill. National Automobile Chamber of Commerce, National Automobile Show.**
30-Feb. 6—**Chicago, Ill. Automobile Salon. Hotel Drake.**

FEBRUARY

6-13—**St. Paul.** Annual Automobile Show St. Paul Automobile Dealers, Inc.
13-20—**Kansas City, Mo.** Annual Automobile Show, Kansas City Motor Car Dealers' Association, American Royal Building.
13-20—**Los Angeles, Cal.** Automobile Salon Hotel Biltmore.
22-March 5—**San Francisco, Cal.** Automobile Salon, Palace Hotel.

New Dealer Appointments By States and Makes

NEW JERSEY

Reo—Taylor Motor Company, Riverton.

Studebaker—Roy Brooks, Vineland.

NEW YORK

Graham-Paige—Ruger's Garage, Gardiner; P. R. Heyward-Brooklyn Motor Company, Inc., Lynbrook.

Reo—H. O. Kenney, Trenton; Jim Wylam, Lockport; L. H. Flack, Lisbon; Maier's Garage, Sag Harbor, Long Island; Jacobs & Haynes, Inc., Cedarhurst, Long Island; Southside Auto Sales, Inc., Freeport, Long Island; E. Marchetti, Tuckahoe.

Studebaker—Valerio Martabano, Mount Kisco.

OHIO

Reo—Howell Motor Company, Xenia; Steiner & Rehrer, Wadsworth; Laine Motor Company, Barberton; Mikesell's Garage, New Paris.

Studebaker—The Market Street Motor Company, Warren.

OREGON

Reo—Dunmire Motor Company, Gladstone.

PENNSYLVANIA

Reo—H. B. High, Doylestown; J. P. Steltzfus, Coatesville; Metcalf & Metcalf, Wilmerding; E. A. Dickey Motor Company, Woodlawn; Spencer Garage, Charleroi; Union Motor Company, Douglassville; Miller Brothers, Dushore; National Auto Service Company, New Kensington; West Penn Motor Company, Tarentum.

Studebaker—Yeiser Auto Company, Myerstown.

TEXAS

Reo—Hamilton-Patterson Motor Company, McKinney.

WASHINGTON

Reo—George's Service Station, Port Angeles.

WISCONSIN

Graham-Paige—Tuft Motor Service, West Allis; North Wisconsin Motor, Inc., Eau Claire.

Reo—Victor LaVine, Menomonie.

Studebaker—Fedyn Tire and Motor Company, Superior.

FOREIGN TRADE OPPORTUNITIES

Washington, D. C., Oct. 15.—Foreign trade opportunities just announced by the automotive division of the Bureau of Foreign and Domestic Commerce of the Department of Commerce are listed below.

Additional information may be obtained from the bureau and its district and co-operation offices by duly registered firms or individuals upon written request, giving the opportunity number:

53872—Vienna, Austria; agency for automobile accessories.

53854—Montreal, Canada; agency for automobile accessories and specialties.

53857—Businghen, Belgium; purchase of automobile motors, gear boxes, rear axles, springs and steering gears.

53896—Copenhagen, Denmark; agency for automobile parts.

54110—Brussels, Belgium; agency for automobile accessories, preferably electrical.

54149 — Johannesburg, South Africa; agency for automobile accessories, replacement parts and garage and shop equipment.

54160—Durban, South Africa; agency for automobile replacement parts.

54111—Cairo, Egypt; agency for automobile ring gears, pinions, transmission gears, differental gears and parts, hub assemblies and axle shafts.

54971—Lisbon, Portugal; agency for automobile accessories, electric parts and ignition systems.

54032—Montreal, Canada; agency for automobile brake lining and clutch facings.

54023—Sao Paulo, Brazil; agency for automobile piston rings and brass rivets for brake linings.

54024—Lagos, Nigeria; agency and purchase of automobile spare parts, including electrical parts.

53965—Rotterdam, Netherlands; agency for grease guns, electric, 1,000.

OIL CONCERN HOST TO SERVICE STATION GROUP

St. Paul, Minn., Oct. 15.—Fifty-eight service station managers and distributors of the Minnesota Oil and Refining Company were entertained at a dinner at the Lowry Hotel. Paul Peterson, manager of the company, gave a talk on service to the consumer and merchandising of petroleum products. Roy H. Currie, vice-president of the organization, which recently consolidated with the Mileage Oil Company and the Petroleum Products Company, also spoke. The Minnesota Oil and Refining Company operates thirty service stations in St. Paul, and plans adding ten more before spring.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

National Transportation Meeting

October 27, 28 and 29

Automotive Daily News will be distributed at the meeting and mailed to important truck fleet owners and bus operators throughout the country. Papers to be read, discussions and features of the meeting will appear first in Automotive Daily News.

Advertising forms close 2 days preceding publications.

Automotive Daily News

SPARKS from DETROIT

(Continued from Page 2)

first trip across. I was sent to interview him on his arrival in New York and the best I could do, figuratively speaking, was to catch hold of his coat tails and ask questions while he was on the move. So full was his day I had to hop into a taxicab with him and ride down to the Battery, where he was getting his baggage through customs, in order to get my story.

Citroen came over then enthused over everything American, and apparently he hasn't gotten over it. He has bought thousands and thousands of dollars' worth of American machinery for his huge plants and he has a representative here in Detroit to pass along to him anything in American industry that will be beneficial to his business.

Major Specifications and Mechanical Details of 1931 Commercial Cars

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
*Am La France Chief	2½	3650	Own	L	6	3¾x5	331.0	33.7	65@2100	G	G & O	Borg	Spic	Ross	Str	Vac	DR	Own	4	Tim	Wo	31.2	B4IMV	—	156	6200	32x6	32x6D
Am. La France Big Chief	6	6725	Own	L	6	4½x6	411.0	40.8	85@1800	—	—	Own	—	Ross	Zen	Vac	DR	Own	4	Own	2 R	32.8	W4IA	—	226	10600	40x8S	40x8SD
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Ti	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	3.75x18	3.75x18
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	Sp	27.9	LO4ID	460	150	5300	34x7	34x7
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	33.5	LO4ID	460	150	5600	34x7	34x7D
†Autocar SH	2½-3	4300	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	44.0	O2IM	328	114	6770	34x7	34x7D
Autocar SCH	2½-3	4300	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	157	6900	34x7	34x7D
†Autocar H	3	4100	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar HS	3½	4600	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7600	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	8100	40x8	40x8D
Autocar SCHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	54.3	O2IM	516	157	8180	40x8	40x8D
Autocar N	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	41.2	OL4IH	574	174	7900	36x8	36x8D
Autocar TEA	3-3½	5350	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.1	LO4ID	602	192	8900	36x8	36x8D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.3	LO4ID	602	192	9300	38x9	38x9D
Autocar C	3½-5	5500	Own	L	6	4½x4½	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	51.7	O2IM	516	172	9500	42x9	42x9D
Autocar F	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-I	7	Tim	Wo	94.0	LT4DV	674	173	11000	36x7S	40x8SD
*Autocar G	10	9000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100.0	T6IA	720	171	13000	36x8	36x8D
Brockway 60	*6000	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	*3200	30x5	30x5
Brockway 65	6500	1195	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	5	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Brockway 75	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	244	137	3450	32x6	32x6
Brockway 90	9000	1525	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Brockway 120	12000	1990	Con	H	6	4 x4⅝	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Brockway 140	14000	2495	Con	H	6	4 x4⅝	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-I	4	Wis	2 R	35.3	L4IHV	356	156	5500	32x6	32x6D
Brockway 141	17000	2935	Con	H	6	4 x4⅝	311.0	38.4	73@2400	C	G & G	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	356	170	6200	32x6	32x6D
Brockway 170	17000	3160	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Brockway 175	17500	3660	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	—	Spic	Ross	Zen	P	Aut	—	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Brockway 195	19500	3820	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Brockway 190	19000	4185	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Zen	P	Aut	Br-I	7	Tim	Wo	78.6	T2IMV	471	168½	7625	34x7	34x7D
Brockway 220	22000	4560	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Brockway 250	25000	5950	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IVA	664	182	10060	40x8	40x8D
Brockway 290	30000	7250	Con	L	6	4⅝x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-I	7	Tim	Wo	88.0	T4IA	676	182	10750	38x7P	40x14S
*Brockway 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-I	7	Tim	Wo	90.9	T4IA	864	213	14000	38x7P	36x10S
Chevrolet	½	355	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	*1880	19x4.75	19x4.75
Chevrolet	1½	590	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	3015	30x5	30x5D
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	—	—	131	2700	30x5	32x6
Commerce Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	L4IH	297	142	3900	30x5P	30x5P
Commerce Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Commerce Series 40	1½	2990	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Commerce Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6P	32x6D
Commerce Series 40	2	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Commerce Series 40	2½	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Commerce Series 60	2½	4580	Bud	L	6	4¼x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6P	36x6D
Commerce Series 60	3	4680	Bud	L	6	4¼x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7100	36x6P	38x7D
Commerce Series 80	3½	5250	Bud	L	6	4¼x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x6S
Commerce Series 80	4	5330	Bud	L	6	4¼x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Commerce Series 100	5	5830	Bud	L	6	4¼x5½	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	793	175	9600	36x6S	40x14S
Day Elder 60	1	895	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	B4IH	344	135	*3300	20x6.00B	20x6.50B
Day Elder 75	1½	945	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	B&O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	B4IM	344	135	3400	20x6.00B	20x6.00DB
Day Elder 85	1½-2	1395	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	42.3	L4IH	380	135	3850	20x6.00B	20x6.50DB
Day Elder 110	2	1825	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	44.9	L4IH	452	156	4880	20x7.00B	20x7.00DB
Day Elder 130	2½	2225	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	40.7	L4IH	578	157	6600	20x7.50B	20x7.50DB
Day Elder 160	3	2775	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	56.1	L4IH	659	156	6800	20x7.50B	20x9.00DB
Day Elder 200	4	3295	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	43.5	L4IHV	768	156	7600	20x9.00B	20x9.00B
Day Elder 240	5	4295	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	50.8	L4IHV	921	162	9500	38x9P	38x9DP
*Day Elder 285	8	5295	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	71.2	L6IHV	1192	164	12000	20x8.25B	20x8.25DB
*Day Elder 345	10	6395	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	79.9	W6IA	1192	164	12500	20x9.00B	20x9.00DB
*Day Elder 402	12	7495	Con	L	6	4¾x5¾	611.4	54.2	127@2300	G	Per	Br-L	Blo	Ross	Zen	P	DR	Br-L	7	Tim	Wo	84.6	W6IA	1192	164	14800	20x9.75B	20x9.75DB
Diamond T 216	1½	695	Her	L	6	3⅜x4¼	228.0	27.3	86@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	252	135½	3260	20x6.50B	20x6.50B
Diamond T 316	2	1095	Her	L	6	3⅜x4¼	263	31.5	85@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	WG	4	Cla	Sp	——	L4IH	350	155	4400	20x6.50B	20x6.50DB
Diamond T 303	2-2½	1585	Her	L	6	3¾x4½	298.0	33.7	67@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IHV	350	159¾	5000	20x7.00B	20x7.00DB
Diamond T 551	2½-3	2250	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV	408	168	5600	20x7.50B	20x7.50DB
Diamond T 504	3	2650	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506	3	2950	Her	L	6	4¼x4½	383.0	43.3	85@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3300	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606	3-4	3400	Her	L	6	4½x4¾	453.0	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4650	Her	L	6	4⅝x5¼	529.0	51.3	114@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W41	552	178	8300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	——	L6IHV	571	189½	8300	36x8P	36x8P
*Diamond T 1200	6	5600	Her	L	6	4½x4¾	453.3	48.6	100@2200	G	G & O	Cov	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	190	11000	34x7P	34x7DP
*Diamond T 1600	8	6220	Her	L	6	4⅝x4¾	479.0	51.3	104@2400	G	G & O	Cov	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	190	11700	36x8P	36x8DP
*Diamond T 1601	8	7500	Wak	L	6	5 x5¾	677.4	60.0	127@2000	G	G & O	Br-L	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	194	12500	36x8P	36x8D
Dodge Bros. UF 10	½	375	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Own	W-O	Car	P	DR	Own	3	Own	Sp	14.2	O4IH	121	109	*2050	19x5.00	19x5.00
Dodge Bros. F 10	½	445	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	W-G	Car	P	DR	Own	3	Own	Sp	14.2	O4IH	121	109	2100	19x5.25	19x5.25
Dodge Bros. U 1	¾	490	Own	L	4	3⅝x4¾	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	36.8	O4IH	189	124	2260	20x6.00	20x6.00
Dodge Bros. DA 1	¾	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	3	Own	Sp	36.8	O4IH	189	124	2360	20x6.00	20x6.00
Dodge Bros. U 1	1	495	Own	L	4	3⅝x4¾	196.0	21.0	45@2800	C	Fed	Borg	Spic	Han	Car	Vac	NE	Own	4	Own	Sp	36.1	O4IH	205	133	2590	20x6.00	32x6
Dodge Bros. DA 1	1	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	4	Own	Sp	33.4	O4IH	205	133	2690	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2750	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2925	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2975	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2800	20x6.00	32x6
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	311	140	3975	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	311	165	4175	20x6.00	20x6.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	350	150	5425	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	350	165	5465	20x6.50	20x6.50D
Dodge Bros.	3	1515	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	135	4235	32x6	32x6D
Dodge Bros.	3	1565	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	41.4	O4IH	382	165	4520	32x6	32x6D
Dodge Bros.	3	1615	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	48.8	O4IH	416	146	5635	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O4IH	416	170	6075	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O4IH	416	195	6190	32x6	32x6D
Essex Com.	¾	445	Own	L	6	2¾x4½	163.0	18.2	55@3300	C	Har	Own	Spic	Gem	Mar	Vac	Aut	Own	3	Own	Sp	5.40	4M	—	110	1970	20x5	20x5.50
Federal D 2	*1½	795	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	131	*3280	20x6.00	32x6
Federal E 2	*1½	895	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	36.3	L4IH	377	132	3330	20x6.00	32x6
Federal F 7	*1¾	1525	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	414	132	3810	30x5	30x5D
Federal A 6	*2	1855	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4635	32x6	32x6D
Federal A 6 T	*2½	2185	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	47.1	L4IHV	659	151	5185	32x6	32x6D
Federal A 6 T W	*2½	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	52.8	L4IHV	659	151	5185	32x6	32x6D
*Federal D 2 S W	*2½-3	1050	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3980	20x6.00	32x6
*Federal E 2 S W	*2½-3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	4030	20x6.00	32x6
*Federal D 2 D	*2½-3	1350	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	4235	20x6.00	32x6
*Federal E 2 D	*2½-3	1450	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	4310	20x6.00	32x6
Federal T 10 B	*2½-3	2740	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 W	*2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 D E	*2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2 R	45.6	L4IHV	659	165	6645	34x7	34x7D
Federal U 6	*3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	Wo	71.6	L4IHV	676	165	7315	34x7	34x7D
Federal U 6 D E	*3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	2 R	69.6	L4IHV	767	165	7315	34x7	34x7D
*Federal A 6 S W	*4	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L6IHV	675	164	5620	32x6	32x6D
Federal 4 C 6 A	*4-5	4735	Con	H	6	4½x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A D E	*4-5	4735	Con	H	6	4½x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A B	*4-5	4960	Con	H	6	4½x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	T4IA	921	192	8980	36x8	36x8D
Federal 4 C 6 A B D E	*4-5	4960	Con	H	6	4½x4¾	381.0	45.9	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	T4IA	421	192	8980	36x8	36x8D
Federal X 8	*7½	5085	Con	L	4	5 x6	471.0	40.0	61@1350	G	Long	Borg	Pet	Gem	Z

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE FIVE)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
General Motors T 42	*15000	1845	Buick	H	6	3½x4⅝	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Sp	33.4	B4IM	524	141	4725	32x6P	32x6DP
General Motors T-44	*16000	1935	Buick	H	6	3½x4⅝	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	50.7	B4IM	524	141	5050	32x6P	32x6DP
General Motors T-45	*16000	1990	Own	H	6	3½x4⅝	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Sp	40.6	B4IM	574	155	5955	34x7P	34x7DP
General Motors T-51	*19000	2565	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	49.8	B4IM	574	155	6095	34x7P	34x7DP
General Motors T-55	*19000	2690	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Wo	52.5	B4IM	685	154	6925	34x7P	34x7DP
General Motors T-60	*22000	3035	Buick	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	52.5	B4IMV	685	154	6965	20x9.00B	20x9.00DB
General Motors T-61	*22000	3445	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IM	793	155	7500	20x9.00B	20x9.00DB
General Motors T-82	*24000	3795	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IMV	865	155	7670	20x9.00B	20x9.00DB
General Motors T-83	*24000	3990	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	53.3	B4IMV	865	171	10630	20x9.75B	20x9.75DB
General Motors T-85	*20000	5600	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	129.0	BrIA	868	185	9400	20x7.50B	20x7.50DB
†General Motors T-90	*28000	5285	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	4	Own	Wo	53.3	B6IA	1191	189	13250	34x7P	34x7DP
†General Motors T-95	*40000	7545	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	51.1	B6IA	1191	189	12850	34x7P	34x7DP
†General Motors T-96	*34000	7195	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	51.1	B6IA	1191	189	12850	34x7P	34x7DP
Gramm A X 4	1	795	Con	L	4	3⅞x4	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	*3300	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3⅜x4	214.0	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4TH	380	131	3550	20x6.00	20x6.50
Gramm B X 4	1½	895	Con	L	4	3⅞x4¼	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3475	20x6.00	20x6.00D
Gramm B X 6	1½	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	G	Per	Own	Blo	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	278	140	4150	20x6.50	20x6.00D
Gramm B	1¾	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2900	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3900	20x6.50	20x6.50D
†Gramm C X 4	2	1095	Con	L	4	4⅛x4¼	227.0	27.2	55@2600	G	Per	Jon	Blo	Ross	Til	Vac	Aut	Cov	4	Eat	Sp	—	——	——	151	——	30x5	32x6
Gramm 16	2	1095	Knight	S	6	2⅛x4⅜	177.9	20.7	53@2600	C	Own	Borg	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm C X 6	2	1295	Con	L	6	3⅜x4⅜	248.2	27.3	70@3000	C	Per	Jon	Blo	Ross	Til	Vac	Aut	Cov	4	——	——	——	——	——	164	——	32x6	34x7
Gramm 21	2½	1295	Knight	S	6	3⅜x4⅜	255.	27.3	70@2600	C	Own	Jon	Blo	Ross	Til		Aut	Cov	4	Tim	Sp	31.0	L4IH	353	160	4800	20x7.00	20x7.00D
Gramm C	2	1795	Lyc	L	6	3⅜x4½	241.6	27.3	82@2660	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm D	2½	1996	Lyc	L	6	3¾x4½	299.0	33.7	90@2200	G	Per	Jon	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2R	—	——	——	190	——	20x7.50	20x7.50D
Gramm 75	3	2395	Knight	S	6	3⅜x4⅜	255.	27.3	70@2600	C	Own	Jon	Blo	Ross	Til	Vac	Aut	Cov	4	Tim	Sp	35.0	L4IHV	659	160	5950	20x8.25	20x8.25D
Gramm E	3	2595	Lyc	L	6	3⅝x5	353.8	36.0	90@2200	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	30.0	L41HA	——	190	7200	20x7.50	20x7.50D
Gramm E Y	3	3595	Con	H	6	4⅛x4¾	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	28.0	BW41M	736	210	7700	20x8.25	20x8.25D
Gramm E Y	3	3595	Con	H	6	4⅛x4¾	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	41A	864	157	9500	20x9.00	20x9.00D
Gramm G Y	4	4345	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	41A	864	157	9500	20x9.00	20x9.00D
Gramm G W	5	5175	Con	H	6	4⅜x4¾	428.0	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2 R	25.2	41A	996	236	10100	20x9.00	20x9.00
Gramm H Y	5	6545	Con	L	6	4¾x5¾	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	*3200	30x5	30x5
Indiana 60	*6000	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Indiana 64	6500	1195	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	190	137	3450	32x6	32x6
Indiana 74	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Indiana 89	9000	1525	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	McC	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Wis	2 R	35.2	K2IM	270	120	3740	32x6	32x6D
Indiana 111 XW	12500	1850	Her	L	6	4 x5	251.3	25.6	46@2000	G		Brl	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Indiana 120	12000	1990	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	35.3	54IHV	356	156	5500	32x6	32x6D
Indiana 130	14000	2495	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	380	170	6200	32x6	32x6D
Indiana 140	17000	2935	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Indiana 141	17000	3160	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	—	4	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Indiana 170	17500	3660	Con	H	6	4⅛x4¾	427.5	45.9	100@2400	C	G & O	——	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Indiana 175	19500	3820	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-I	Spic	Ross	Str	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	500	163½	7625	34x7	34x7D
Indiana 195	12000	4185	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Indiana 190	22000	4560	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IHV	664	182	10000	40x8	40x8D
Indiana 220	25000	5950	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
Indiana 250	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
Indiana 290	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
*Indiana 640																													
International A 2	1½	675	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	*2935	5.50x20	6.00x20
International B 2	1½	725	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	47.3	BE4IM	212	136	2960	5.50x20	6.00x20
International A L 3	1½	1450	Lyc	L	6	3¼x4½	224.0	25.3	52@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM	295	138	4032	20x6.00	20x6.00D
International A 4	2	1860	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	378	145	5221	32x6	32x6D
International A 5	3	2550	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	62.5	BE4IM	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	62.5	BE4IM	430	156	6120	34x7	34x7D
International W 1	2½	3850	Hall	H	4	4¼x5½	312.0	28.9	59@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	60.5	BE4IM	710	148	8300	36x5S	36x8S
International W 3	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	70.5	BE4IM	794	160	10125	36x6S	40x12S
La France Rep. A 1	6000	795	Lyc	L	6	3 x4¾	201.5	21.5	60@2500	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	378	132	3000	20x5.50	32x6
La France Rep. C 1	7500	1295	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G & O	Eorg	Spic	H2n	Zen	Vac	Aut	Ful	4	Tim	Sp	29.1	L4IH	413	144	3300	20x6.00	32x6
La France Rep. D 1	9000	1595	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	37.9	L4IH	448	144	3725	30x5	30x5D
LaFranceRep. E-1	13000	1985	Bud	L	6	3½x4½	260	29.5	69@2600	G	Per	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	40.1	L4IHV	536	150	5000	20x7.50	20x7.50D
La France Rep. F-3	13000	2395	Lyc	L	6	3¾x4½	299.0	33.7	80@2500	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	4	Wis	2 R	41.6	L4IHV	658	174	6370	34x7	34x7
La France Rep. H 2	16000	2985	Lyc	L	6	3⅞x5	354.0	36.0	85@2300	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	5	Wis	2 R	48.1	L4IHV	768	174	7500	36x8	34x7D
La France Rep. M 2	20000	4000	Wak	L	6	4⅝x5½	462.0	46.0	97@2000	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	4	Wis	2 R	45.4	L4IHV	870	174	9250	38x9	36x8D
La France Rep. 35-2	24000	5600	Wak	L	6	4½x5¾	549.0	48.6	98@1850	G	Own	Ful	Spic	Han	Zen	P	Aut	Ful	4	Wis	2 R	45.4	L4IHV	870	174	9250	38x9	38x9D
Maccar 36 A	1½	1900	Bud	L	6	3¾x4½	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	30.6	L4IH	315	171	4850	32x6	32x6D
Maccar 40 A	2	2400	Bud	L	6	3¾x4½	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	38.8	L4IHV	325	171	5340	32x6	32x6D
Maccar 56	3	3350	Bud	L	6	3⅝x5	311.0	33.7	72&2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Wis	2 R	37.4	L4IHV	411	183	6200	34x7	34x7D
Maccar 60	3	3950	Bud	L	6	4½x5½	411.0	40.8	103@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	34.3	L4IHV	411	183	6600	20x9.00	20x9.00D
Maccar 66 A	4	5500	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	64.5	W4IA	617.5	206	8200	20x9.75	20x9.75D
Maccar 86 A	5	5950	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	72.3	W4IA	623	206	9500	20x10.50	20x10.50D
†Maccar SW-86	10	8250	Her	L	6	4½x5¼	529.0	51.3	124@2200	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	5	Tim	Wo	72.3	T6IA	103	206	11700	20x10.50	20x10.50D
††Mack B L	——	2500	Own	L	6	3¼x5	248.9	25.3	63@2800	G	Own	Own	Spic	Gem	Str	Vac	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	*4450	20x6.00B	20x6.00DB
††Mack B G	——	3000	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Sp	Opt	O4IV	415	156	5200	32x6	32x6D
††Mack A B	——	4350	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7100	34x7	34x7D
Mack A B	——	4000	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
Mack A B	——	4500	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7050	34x7	34x7D
††Mack A B	——	4150	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
††Mack B C	——	5250	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	2 R	Opt	O4IV	471	154	8350	36x8	36x8D
††Mack B C	——	5500	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	610	154	8500	36x8	36x8D
††Mack B J	——	6150	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	567	168½	10100	36x8	36x8D
††Mack A K	——	5150	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	O4IV	492	162	9800	36x5S	36x5DS
††Mack A K	——	5250	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	2 R	Opt	O4IV	492	162	9700	36x5S	36x5DS
††Mack A C	——	4950	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	9500	36x5S	40x5DS
††Mack A K	——	6450	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	492	174	10950	22x10.50B	22x10.50DS
††Mack A C	——	5500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10100	36x6S	40x6DS
††Mack A C	——	6550	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	Ch	Opt	O4IV	492	174	11950	24x10.50B	24x10.50DB
††Mack A C	——	6000	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10450	36x7S	40x7DS
††Mack A P	——	9500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	297	191	12200	36x7S	40x8DS
††Mack A K 6—6 wheel	——	9500	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	ONIA	574	152-52	16300	9.75x22B	9.75x22DB
††Mack A C 6 wheel	——	7650	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	ORIV	574	125-52	13800	36x6S	40x12S
††Mack A C 6—6 wheel	——	9000	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	O6IA	574	145-52	14950	40x8	40x8D
Mack A P 6 wheel	——	11500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IA	574	145-52	15250	40x8	40x8D
††Mack A P 6 wheel	——	12000	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	† Str	Gra!	NE	Own	4	Own	2 R	Opt	O6IA	574	145-52	——	22x9.75B	22x9.75B
Paige	½	*895	Own	L	6	3½x4½	207.0	23.4	66@3200	C	Long	Long	Un	Ross	DL	F	DR	—	3	——	Sp	14.2	4HI	264	115	†2350	18x5.50B	18x5.50B
Pierce-Arrow P T	12000	2950	Own	L	6	3¾x4½	298.0	33.5	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	——	B4IMV	388	160	*5600	20x7.50B	20x7.50B
Pierce-Arrow P W	18000	4150	Own	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	488	150	6660	20x9.00B	20x9.00B
Pierce-Arrow P X	24000	5375	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	——	W4IA	610	160	9300	20x10.50B	24x10.50B
Pierce-Arrow P Y	28000	5950	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	*Wo	——	W4IA	701	160	10675	24x10.50B	24x10.50B
Pierce-Arrow P Z	34000	6950	Own	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	160	12800	36x7B	40x16B
Relay Series 15 AA	¾	1370	Con	L	6	3⅜x4	214.7	27.3	62@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3750	30x5P	30x5P
Relay Series 15 AB	1	1400	Con	L	6	3⅜x4	214.7	27.3	62@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3800	30x5P	30x5P
Relay Series S 11	1	1700	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	25.5	L4IH	297	142	4050	30x5P	30x5DP
Relay Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	30.0	L4IH	297	162	4500	30x5P	34x5DP
Relay 40 CA	1½	3040	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5550	34x5P	36x6DP
Relay 40 CB	2	3290	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5750	36x6P	36x6DP
Relay Series 56	2	3860	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	58.5	L4IH	584	161	6800	36x6	36x6D
Relay Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	30.0	L4IH	297	162	4700	32x6P	32x6DP
Relay 40 CC	2½	3325	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5950	36x6P	36x6DP
Relay Series 50	2½	4000	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2R	58.5	L4IH	584	161	7000	36x6	33x7D
Relay Series 60	2½	4555	Bud	L	6	4⅛x5½	410.9	40.8	83@2160	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	175	7350	36x6	36x6D
Relay Series 50	3	4130	Bud	L	6	3¾x5	330.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2R	58.5	L4IH	584	161	7200	36x6	40x8D
Relay Series 60	3	4595	Bud	L	6	4⅛x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	175	7500	36x6	38x7D
Relay Series 80	3	5330	Bud	L	6	4½x5½	411.0	40.8	83@2100	G	Long	Borg	Blo	Ross	Zen	Vac	Aut	Cov	5	Own	2R	84.1	L4IH	——	175	8400	36x6	40x10S
Relay Series 60	3½	4745	Bud	L	6	4⅛x5½	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2R	58.5	L4IH	584	175	7800

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE SIX)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Standard Tire Sizes Rear
Selden 67 C	5	4975	Con	H	6	4⅜x4¾	427.0	45.9	100@2400	C	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	L4IHVA	—	171	8700	36x8	36x8D
Selden 77	7	7365	Con	L	6	4⅜x5¾	611.0	54.1	127@2300	G	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	BW41M	—	178	11600	40x8	42x9D
Service Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Bio	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	——	—	142	3900	30x5P	30x5P
Service Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Bio	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Service Series 40	1½	2990	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Bio	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Service Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Bio	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4590	32x6	32x6D
Service Series 40	2	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Bio	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L41H	394	168	4900	36x6	36x6D
Service Series 40	2½	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Bio	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 60	2½	4580	Bud	L	6	4½x5½	410.9	40.8	83@2100	G	Long	Ful	Bio	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	43.0	L4IH	584	175	7000	36x6	36x6D
Service Series 60	3	4680	Bud	L	6	4½x5½	410.9	40.8	83@2100	G	Long	Ful	Bio	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	43.0	——	—	175	7180	36x6	36x7D
Service Series 80	3½	5250	Bud	L	6	4½x5½	411.0	40.8	83@2100	G	Long	Borg	Bio	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	58.2	——	—	175	8200	36x6S	36x12S
Service Series 80	4	5330	Bud	L	6	4½x5½	411.0	40.8	83@2100	G	Long	Own	Bio	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	58.2	——	—	175	8400	36x6S	36x14S
Service Series 100	5	5830	Bud	L	6	4½x5½	410.9	40.8	83@2100	G	Long	Own	Bio	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	93.0	——	793	175	9600	36x6S	40x14S
Stewart 30	1	695	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	: :	130	*3158	20x6.50	20x6.50
Stewart 30X	1	795	Lyc	L	6	3 x4¾	185.0	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	: :	136	3199	20x6.50	20x6.50
Stewart 40	1½	895	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	: :	130	3531	20x6.50	20x6.50D
Stewart 40 X	1½	995	Lyc	L	6	3 x4½	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	: :	130	3574	20x6.50	20x6.50D
Stewart 34 X	1½	1195	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	: :	145	3891	20x6.50	20x6.50D
Stewart 28 X	2	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	: :	136	4239	20x6.50	20x6.50D
Stewart 29 X S	2	1695	Lyc	L	6	3⅝x4½	278.0	31.5	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	: :	145	4194	32x6	32x6D
"Stewart 18 X	2½	2690	Lyc	L	6	3⅝x5	310.0	36	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Tim	Wo	48.1	B4IM	: :	165	6245	32x6	32x6D
Stewart 32 X	2½	1990	Lyc	L	6	3⅝x4½	278.0	31.5	80@2600	G	Med	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	: :	165	*5552	32x6	32x6D
Stewart 35 X	3	2590	Lyc	L	6	3¾x4½	299.0	33.8	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	: :	165	5224	20x8.25B	20x8.25D
Stewart 36 X	3	2990	Lyc	L	6	3⅝x5	354.0	36.2	90@2750	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	4	Tim	Wo	108.1	B4IM	: :	165	6884	20x8.25	20x8.25D
Stewart 48-8	3	2990	Lyc	L	8	3¾x4¾	420.0	130.0	45@2800	G	Fed	Br-L	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4MV	: :	170	6750	8.25x20DB	8.25x20DB
Stewart 19 X	3½	3690	Lyc	L	6	3⅝x5	354.0	36.2	90@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	108.1	B4IM	: :	165	7474	34x7	34-7D
Stewart 32-8	3½	3990	Lyc	L	8	3¾x4¾	462.0	44.4	130@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	108.1	B4IMV	: :	170	7944	20x9.00	20x9.00DB
Stewart 38-6	3½	3990	Wak	L	6	4¾x5½	420.0	45.9	100@2000	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	108.1	B4IMV	: :	170	7944	20x9.00	20x9.00D
Stewart 31 X	5	4990	Wak	L	6	4⅝x5½	516	51.2	105@2000	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	108.1	B4IMV	: :	165	9285	36x6S	36x6SD
Stewart 27 X	7	5700	Wak	L	6	4⅝x5½	516	51.2	105@2000	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	108.1	B4IMV	: :	165	10512	36x7	40x7D
Studebaker S-1	½	595	Own	L	6	3⅜x4½	221.0	27.3	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	3	Own	Sp	16.4	B41M	143	114	—	19x5.25	19x5.25
Studebaker S-20	1½	695	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	36.2	B41M	224	130	2965	20x6.00	32x6
Studebaker S-30	1½	775	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	36.2	B41M	224	160	3130	20x6.00	32x6
Studebaker S-40	2	895	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	43.5	B41M	276	136	3705	20x6.50	20x6.50D
Studebaker S-50	2	920	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	43.5	B41M	276	148	3835	20x6.50	20x6.50D
Studebaker S-60	2	945	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	43.5	B41M	276	160	3890	20x6.50	20x6.50D
Studebaker 88	——	3395	Own	L	8	3½x4¾	327.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	54.6	B41MV	444	184	5413	20x7.50	20x7.50D
Studebaker 99	——	3795	Own	L	8	3½x4¾	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	54.6	B41MV	505	184	5680	20x7.50	20x7.50D
White 15B	*7,500	1545	Own	L	4	3¾x5½	226.4	22.5	31@1600	G	Own	Own	Spic	Own	Zen	Vac	L-N	Own	4	Own	Sp	18.6	O2XM	226	133½	3402	30x5	30x5
White 160	*8,000	1700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L41H	276	138	4025	30x5	30x5
White 60	*8,000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	17.6	L41H	276	138	3739	30x5	30x5D
White 161	*9,000	1850	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L41H	276	138	4290	34x7	34x7
White 162	*10,000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	27.4	L41H	349	148	4260	30x5	30x5D
White 210	*10,000	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	4875	30x5	30x5D
White 61	*10,500	2450	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	4769	30x5	30x5D
White 611	*11,500	2550	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	4580	20x7.00B	20x7.00DB
White 211	*11,500	2425	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	5110	32x6	32x6D
White 212	*13,000	2700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	5230	34x7	34x7D
White 56	*13,000	3125	Own	L	4	4 x5¾	289.0	25.6	45@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	26.2	O2IM	268	165	5276	36x4	36x7
White 612	*13,000	2800	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L41H	349	148	5100	20x7.50B	20x7.50DB
White 620	*15,000	4350	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	OL4IHV	—	157	7300	20x8.25B	20x8.25DB
White 51A	*17,000	3750	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O2IM	335	170	6438	36x5	36x8
White 51AT	*17,000	3875	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	46.6	O2IM	335	134	6227	36x5	36x8
White 621	*18,000	4650	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	—	157	7700	20x9.00B	20x9.00DB
White 640	*20,000	6100	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	—	180	9200	20x9.00B	20x9.00DB
White 630	*20,000	5000	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	554	168	8500	20x9.00B	20x9.00DB
White 55	*21,500	4650	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	66.1	OPXM	224	174	6737	36x5	40x5D
White 58	*22,000	4400	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	48.1	OPXM	224	180	7797	36x5	36x5D
White 641	*24,000	6450	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	44.8	O4IA	—	180	9700	20x9.75B	20x9.75DB
*White 630 SW200	*24,000	6280	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	—	168	9000	20x8.25B	20x8.25DB
White 631	*24,000	5750	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	58.4	OPXM	224	174	9409	20x9.25B	20x9.25DB
White 52	*28,000	5100	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	74.5	OPXM	224	174	9409	36x6	40x12
White 52T	*28,000	4700	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	66.8	OPXM	224	129½	8451	36x5	40x5D
White 643	*32,000	6950	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.8	O4IA	—	180	10900	24x10.50B	24x10.50DB
*White 642 SW310	*34,000	8045	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	88.6	OTIHV	—	198	12670	20x9.00B	20.9.00DB
White 642	*34,000	6750	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.8	O4IA	—	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40,000	8570	Own	H	6	4⅜x5⅜	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	99.9	OTIHV	—	198	14400	40x8	40x8D
**White 60K	——	2200	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.6	L41H	276	112	3200	20x7.00B	20x7.00B
White 601	——	1900	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L41H	276	138	3825	20x7.00B	20x7.00B
White 602	——	2050	Own	L	6	3½x4½	260.0	29.4	50@1800	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L41H	276	138	4125	20x7.50B	20x7.50B
Willys 6-C-112	½	395	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	143	113	1923	19x5.00	19x5.00
Willys 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	131	2625	20x5.50	32x6
Willys 6-C-157	1½	630	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	157	2900	20x5.50	32x6

GENERAL NOTATIONS

***†REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; T, T head; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G & O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

CLUTCH MAKE — Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

UNIVERSALS MAKE — Spic, Spicer Mfg. Co.; Bio, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Grs, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM — AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Lesce-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE, Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE — IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TYPE OF SERVICE BRAKES—

B4IM, Bendix, 4 wheel, internal mechanical; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel, internal mechanical, vacuum; BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal mechanical; BO4IM, Bendix front, own rear, 4 wheel internal mechanical; B4IH, Bendix, 4 wheel, internal hydraulic; B4, Bendix, 4 wheel.

C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum; LT4IDV, Lockheed Timkin, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHV, Lockheed, 4 wheel, internal hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; OJXM, Own, jack shaft, external, mechanical; OL4IH, Own, Lockheed, 4 wheel, internal, hydraulic; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air. W6IA, Westinghouse 6 wheel, internal, air. 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

*Chief model also available as 2½-ton model, 34x7 tire, dual rear; weight, 6,400. Price, $3,900.

Balloon tires optional on Chief and Big Chief models.

AUTOCAR

*Engines in these models are located under the driver's seat.

BROCKWAY

*Six-wheelers.

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DAY ELDER

*Six-wheeler.

Additional standard wheel bases are available on different models as follows:

85.....146, 168		240.....204	
116.....168, 196		285.....204	
130.....163, 187, 193		345.....204	
160.....168, 180, 204		402.....204	

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

DIAMOND T

*Six-wheelers.

Additional standard wheel bases available as follows:

551.....158		750.....167, 192	
504.....166½		801.....180½, 198¼	
506.....174		1200.....174½, 180	
603.....157, 179		1600.....174½, 180	
606.....177½		1601.....184	

F. W. D.

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

FEDERAL

*Six-wheelers.

*Also rated in pounds of total allowable weight as follows:—

D 2	8,500	T 10 D R	18,000
E 2	8,500	U 6	20,000
F 7	10,000	U 6 D R	20,000
A 6	13,500	A 6 S W	18,500
A 6 T	15,000	4 C 6 A	24,000
A 6 T W	15,000	4 C 6 A D R	24,000
D 2 S W	12,500	4 C 6 A B	24,000
E 2 S W	12,500	4 C 6 A B D R	24,000
D 2 D	12,500	X 8	30,000
E 2 D	12,500	X 8 D R	30,000
T 10 B	18,000	X 8 R	30,000
T 10 W	18,000	X 8 RDR	30,000

†Solid tires standard, no spare rim or tire.

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	157	1 to 1½ tons
BX 4	10,000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180	2 to 3 tons
CX 6	12,000	157-180	2 to 3 tons
B	12,000	157-174	1¾ to 2½ tons
C	14,000	145-196	2 to 3 tons
D	17,000	145-196	2½ to 4 tons
E	20,000	145-196	3 to 4½ tons
EY			3 to 4 tons
GY			4 to 5 tons
GW	28,000	157-240	5 to 7½ tons
HY			5 to 6½ tons

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis, body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follows:

Model	Wheel Bases	Tire Types	Range of Rec. Gross Weights*	Pay Load Range
T-11	1	1	3800	½
T-15	3	10	4500- 6500	½-1½
T-18	3	..	7500- 8200	1½-2
T-19	3	..	6800-10000	1½-2½
T-26	3	17	9000- 9000	1½-2
T-26	4	..	8500-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
TX 186½	1	..	14000	
WX 185	1	..	14500	
T-42	4	12	12000-15000	2½-4
T-44	4	12	12000-16000	3-4½
T-45	4	..	13500-16000	3-4½
WX 215	1	..	17000	
T-51	4	..	16500-19000	4-5½
T-55	4	..	16500-19000	4-5½
T-60	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-24000	5-7
T-85	3	..	25000-30000	6-8
T-90	3	7	22000-28000	5-7½
T-95	3	..	30000-40000	7-11
T-96	3	..	28000-34000	7-9

†Models T-90, T-95 and T-96 are six-wheelers, the latter having one driven and one trailing axle. Optional rear axle gear ratios available for all models, except Model T-18. Double reduction axles available for Models T-60, T-61, T-82 and T-83.

INDIANA

*Six-wheelers.

MACK

Other wheel bases furnished on all truck models.

On 6-wheel jobs 4 rear wheels driven by chains, foot brake on 4 rear wheels.

††Made also in tractor models.

PAIGE

*Price includes panel or screen body.

†Chassis weight given does not include gas, water, etc.

PIERCE-ARROW

*Optional final drive on Models PW, FX, PY and PZ.

REO

Models DF, FA, FE and FF are available with dual wheels at additional cost.

*Model DF X can be had with 3 speed transmission and single tires for $895.

SELDEN

Additional standard wheel bases are available on different models as follows:

Model 37C.....	162 and 181
39C.....	177 and 190½
47CB, 47CD.. 151, 164 and 184	
67C.....151, 164, 184 and 198	

STEWART

Models 30 and 30X can also be supplied in 110, 120, 140 and 160-inch wheel base.

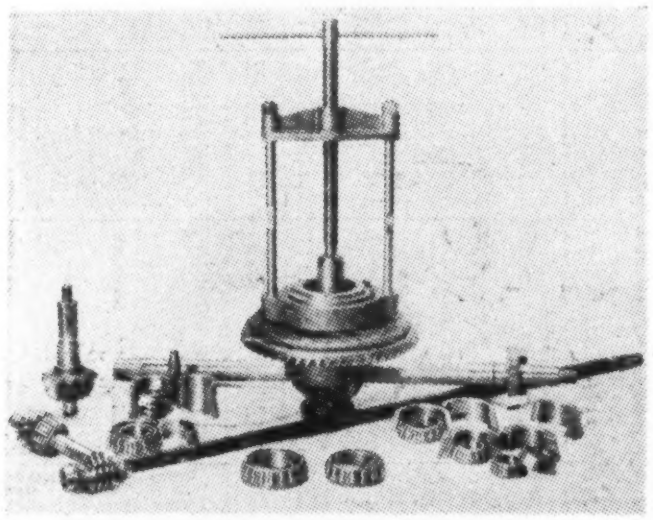
Models 40 and 40X can also be supplied in 110, 140 and 160-inch wheel base.

*Models 34X can be supplied in 135, 145, 160 and 176-inch wheel base.

Model 28X can be supplied in 130, 145,

Production--Engineering--Factory

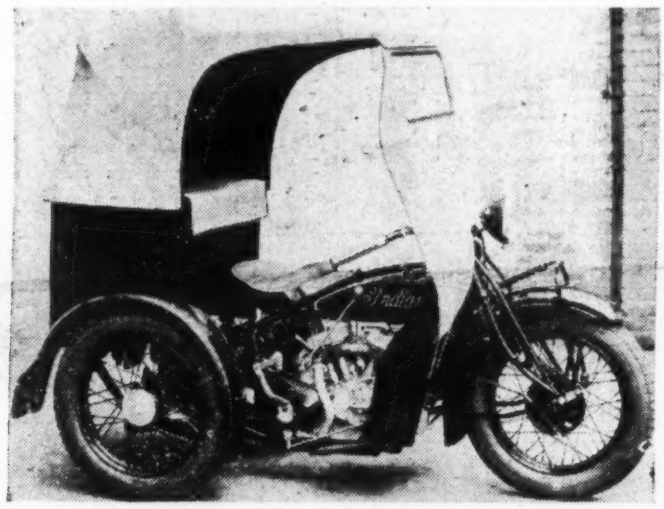
Dismounting Press Speeds Removal of Bearings



A dismounting press which is claimed easily and quickly to remove any Timken or other anti-friction bearing without damaging the bearing in the slightest is announced by the Curtiss & Smith Manufacturing Corporation, 245-251 South St., Newark, N. J. The press can also be used to remove gears, spirals, pulleys, disks, collars, bushings, etc.

A bulletin has been published by Curtiss & Smith which shows all details of the press complete—cross-sectional views, designs of chucks, adapters, bases, etc., and set-ups for dismounting all kinds of bearings, gears, worms, etc.

New Indian Dispatch Car



The Indian Motocycle Company, Springfield, Mass., announces through E. Paul du Pont, president, that it is in active production on its new three-wheeled delivery vehicle, the Dispatch car, incorporating a number of improvements developed during a strenuous test period.

The Dispatch car is mounted on the standard Indian chassis of heavy tubular construction, supplemented by malleable cast iron members to meet requirements of commercial duty. It has a welded steel body with ply-wood rubber-lined spring suspended cargo box 21 inches wide, 18 inches long and 13½ inches deep, carrying 100 pounds of packages. The power plant is the Indian twin-cylinder air-cooled engine, with three-speed transmission. Primary drive is by helical gears and final drive by chain. Brakes are fitted front and rear. Standard Indian ignition and lighting are used, with battery, generator and magneto. The wheelbase is 52 inches and the tread 30 inches. A neat top and windshield protect the driver in bad weather and fold out of the way when not in use. The Dispatch car can park in a 39-inch space.

BRIGHT STAR BATTERY ADDS NEW FOCUSING SPOTLIGHT

The Bright Star Battery Company, Hoboken, N. J., has just brought out a new focusing flashlight. This is a two-cell light, called the Empire. The advantage claimed for this flashlight is that it requires only one hand to operate. It is not necessary to turn the head, tube or barrel to focus the flashlight and obtain a spot. A slide contact and a star disk under the thumb give control.

The flashlight is of polished nickel or gold finish. The tube is a new design, non-slip, ribbed pattern, with a plain band through the center, adding to its attractiveness. They are packed separately in attractive display boxes.

RUSCO STAGES TWO BIG BRAKE CLINICS

Middletown, Conn., Oct. 15.—Important brake clinics were held in two places on the same night this week, in Baltimore, Md., and Hanover, Pa., by representatives of the Russell Manufacturing Company, maker of Rusco brake linings and other automotive products.

The Baltimore clinic, conducted by the Rusco jobber, George S. Wareheim, was attended by more than 500 garage and service station operators, fleet owners and others interested in automotive technical matters. A talk on brakes was given by Ralph F. Jones, engineer from the Rusco factory, and the meeting ended up with a Rusco film, depicting manufacturing methods in the Rusco factory. H. L. Wallbrecht, manager of the New York division of the Russell company, presided.

G. E. ADDS PLUNGER TYPE SNAP ACTION SWITCH FOR FACTORY USE

A new plunger-type, snap-action, weather-proof limit switch, bearing the type designation CR-9441-LS443D, and designed for general industrial applications, has been announced by the General Electric Company. The switch is particularly adapted for foot operation, and may be mounted in any position.

The switch has six separate electrical circuits, three normally open and three normally closed. Each contact arm in the switch may be removed by taking out a screw for easy access to the terminal studs for connecting the control lines.

The switch has a positive snap action in either direction, and is operated by a cam and ball mechanism. The plunger is fitted with two main springs. The returning spring resets the switch in normal position when pressure is removed from the plunger, while the overtravel spring compensates for any overtravel in excess of the half inch required to operate the switch.

As pressure is applied to the plunger, the return spring compresses from a pressure of 26 pounds at 1⅞ inches in length to 45 pounds at 1⅜ inches in length where the switch snaps over. When pressure is removed from the spring plunger, this increased energy in the return spring snaps the switch mechanism back to normal position.

The normal pressure of the overtravel spring is fifty pounds at 1⅞ inches in length. Consequently, this section will act as a solid member during the normal operation. However, in case the adjustment of the switch is not accurate, any overtravel up to one-half inch will be taken up by the overtravel spring. A round head set screw and lock nut are supplied as part of the overtravel member for adjusting the switch when installing it.

The switch is of rugged construction and is particularly adapted for rough-duty installations. The inclosing case is of weather-proof cast iron construction. An opening in the side of the case permits the connection of a one-inch conduit. All bearings are made of oilless bearing material, and, consequently, no lubrication is needed after installation.

PISTON RING CO. HAS NEW DECIMAL EQUIVALENT CHART

A new decimal equivalent chart has been made available by the Piston Ring Company, Quality Brand manufacturer.

This new chart measures 14x22 inches, and is attractively designed and printed in three colors. Its greatest and most valuable feature, however, is its series of ten piston ring installation helps, fully described and illustrated by individual pen-line drawings.

The Piston Ring Company has taken a much-needed step in introducing a handy reference wall chart, combined with decimal equivalent sizes, for the installation of piston rings according to the very latest and generally accepted shop practices.

Here are to be found several hints and suggestions for proper methods of checking sizes, clearances, etc., worked out and constantly applied by piston ring engineers in the plant of the Piston Ring Company.

Quality Brand jobbers are being supplied with these charts for free distribution among their accounts.

APPOINTS G. H. CASSIDY

Portland, Ore., Oct. 15.—H. E. Counts, president of the Fletcher Tire Company, Firestone dealer, has announced the appointment of George H. Cassidy as sales manager in charge of two east side service stations and tire shops. Mr. Cassidy formerly headed a tire company in Portland and has many years' experience in the line.

Nation's Engineers Plan To Aid Unemployed

PLANS to mobilize the nation's engineers behind President Hoover's program to end the depression are announced by the American Engineering Council. The aid of more than 100,000 engineers will be enlisted in a movement to increase and to stabilize employment, and to prevent the adoption of unwise legislation, Federal, state or municipal.

The council will work with the relief organization set up by the President under the headship of Walter S. Gifford, president of the American Telephone and Telegraph Company, who is a member of the American Institute of Electrical Engineers. The aim, it was said, is not only to promote emergency measures, but to develop sound, permanent employment policies throughout American industry.

F. J. Chesterman of Pittsburgh, vice-president and general manager of the Bell Telephone Company of Pennsylvania, has been appointed chairman of a national committee to direct the engineering effort, which will be carried out in detail by committees to be named in every state. These committees will cooperate with the industries and with civic and business bodies.

Other members of the national committee are: Gen. R. C. Marshall, Jr., of New York, who was in charge of the construction division of the War Department during the World War; E. K. Ruth, American Oak Leather Company, Cincinnati; W. R. Webster, Bridgeport Brass Company, Bridgeport, Conn.

"The American Engineering Council," the announcement declared, "feels most emphatically that the immediate answer for unemployment is jobs; that the spreading of man-hours is the most essential expedient for stabilizing employment that can be suggested at the present time

"The situation calls for very active, concerted and well-considered efforts to provide employment for as large a number as possible now, and especially to the development of plans which will forestall any large increase in unemployment next winter.

"Undoubtedly the attitude of mind accounts for the sharp decline in purchases being made by those who have not suffered material, if any, reduction in income and whose continued income is as safe as anything in life. Today many who have employment are not spending, because of fear of what may happen. They are fearful that they may lose their jobs or have their income sharply curtailed.

"It would be exceedingly helpful to restore a sense of security. Therefore, employers are urged to at once notify all employees whom they know they are going to keep on the pay roll that their incomes will not be reduced for some definite period of time. This alone would be very effective in restoring confidence and stimulating business."

CANADIAN STUDENTS WIN HONORS AT G. M. SCHOOL

Oshawa, Ont., Oct. 15.—Seven Ontario young men, who were among the many students taking the cooperative service training course at the General Motors Institute of Technology, Flint, Mich., have carried off nearly all the graduation honors for the year's term, which has just closed. The successful Canadian students and their standing in the large graduating class were as follows: A. E. Sinclair, Oshawa, first; C. Farrow, Toronto, second; O. Freeman, London, third; J. S. Northcott, Oshawa, fourth; C. D. Gage, Hamilton, sixth; E. Pringle, Belleville, seventh.

Diplomas have been granted to the Canadians and they are all placed in General Motors service work at various branches. Announcement of the examination results directs attention not only to the excellent scholastic record of the men from the Dominion, but also to the course itself, which is an ideal training for automobile service work, and an indication of the thoroughness with which General Motors of Canada lays the groundwork for satisfactory service to the public.

The training work is partly done in Canada. The students alternate between Flint and some Canadian branch of General Motors, spending three two-month periods at each place.

A number of Canadian students are also enrolled in a four-year course at the Flint institute and will graduate with the equivalent of engineer degrees. These students also alternate between United States and Canada and, at the end of their course, will be eligible for a position in sales and service work with General Motors of Canada.

BRITTAN & CO. NAMES CARR SALES DIRECTOR

Portland, Oct. 15.—Appointment of W. G. Carr as sales director for Brittan & Co., Oakland-Pontiac distributor, has been announced by Percy R. Brittan, president of the company. Mr. Carr has been active in automotive circles of the Pacific Northwest since 1910.

INTERNATIONAL GARAGE GROUP OPENS THREE-DAY CONVENTION AT RESORT

Atlantic City, N. J., Oct. 15.—With Millard C. Dorntge of Buffalo officiating as president, the International Garage Association is holding a three-day session in Haddon Hall here.

The association covers the entire United States in its survey, but the attendance on opening was limited to about a score of big garage owners from east of the Mississippi. Most of the discussions were confined to technical points of the business.

A paper was read by Allen A. Kerr of Cleveland, O., on "Parking Rates That Make for Best Net Returns."

D. E. Van Volkenburg of Youngstown, O., presented a paper on "Street Parking and Municipal Competition," and G. A. Gruettner of Milwaukee discussed how to organize local parking garage associations.

A. J. SAYERS, ENGINEER, LINK-BELT CO., DIES

Chicago, Oct. 15.—Albert Jefferson Sayers, Link-Belt engineer, 61, passed away at his home, 7121 Eggleston Ave., Chicago, on Sunday morning.

Mr. Sayers was head of the coal tipple and coal washery department of Link-Belt Company, Chicago. He was well known throughout the entire coal industry, having designed and built numerous plants for the handling and preparation of coal, in all parts of the country, and was recognized as one of the leading designers of this type of equipment.

GLEN G. HOLT JOINS HEINTZ MANUFACTURING

Philadelphia, Oct. 15.—Announcement is being made by George H. Hannum, general manager of the Heintz Manufacturing Company, Philadelphia, of the engagement of Glen G. Holt in the capacity of contact man for the Heintz Company.

Mr. Holt for over thirteen years has been associated with the Hannum Manufacturing Company and its predecessor, the Levine Gear Company of Milwaukee.